

PHILCO MODEL 46-427

TRADE NAME	Philco Model 46-427
MANUFACTURER	Philco Corp., Tioga & C Streets, Philadelphia, Pa.
TYPE SET	AC - DC 2 Band Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types 14AF7 Converter, 7B7 1st IF Amp., 7B7 2nd IF Amp., 7C6 2nd Det.-AVC-1st Audio, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	115 Volts AC-DC Rating .245 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1720KC
SHORT WAVE	9.0-15.5MC

ALIGNMENT INSTRUCTIONS

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD	High side to ant. stator section of tuning gang. Low side to B-.	455KC	BC	Low freq. end of dial.	Across voice coil. Left and center lugs on terminal strip at rear of chassis.	A1, A2, A3, A4	Adjust for maximum output. Preset A4 by turning it down tight. Then adjust in order including A4. Use isolation transformer if available. If not, isolating capacitor must be connected between generator ground lead and receiver B-. Also decrease dummy to .001 MFD to prevent excessive hum modulation.
"	High side to ant. connection (right hand lug) on terminal strip at rear of chassis. Low side to B-.	1700KC	"	1700KC	"	A5	Preset A7 by turning it down tight and backing off 1/3 turn. Adjust A5 for maximum output. Use isolating instructions given for IF's.
"	"	1500KC	"	Tune to 1500 KC signal.	"	A6	Adjust for maximum output. Use isolation instructions.
"	"	600KC	"	Tune in 600 KC signal.	"	A7	Adjust for maximum output. Rock dial. Use isolation instructions.
"	"	"	"	"	"	"	Repeat adjustments on A5 and A6 in order and at frequencies given.
"	"	15MC	SW	15MC	"	A8, A9	Adjust for maximum output. Use isolation instructions.

Volume control at maximum and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA			INSTALLATION NOTES
		PHILCO PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	
1	Converter	14AF7/XD	14AF7/XD	8AC	
2	1st IF Amp.	7B7	7B7	8V	
3	2nd IF Amp.	7B7	7B7	8V	
4	Det.-AFC-AF	7C6	7C6	8W	
5	Output	50L6GT	50L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
		PHILCO PART No.	MALLOY PART No.	SOLAR PART No.	SPRAGUE PART No.	
7(A)	20	30-2541	2N509	DEN-2X20-150	TA-220	Filter - Red
8	150					
9	.04	30-4119	TP425	S-8-04	TC-14	Line Filter
10	.04	30-4119	TP425	S-8-04	TC-14	Line Filter
11	.02	30-4599	TP423	S-4-02	TC-12	RF Bypass Rect.
12	.01	400	TP421	S-4-01	TC-11	50L6 Plate Bypass
13	.05	61-0120	TP421	S-4-01	TC-11	Audio Coupling
14	.05	200	TP426	S-4-05	TC-15	AFC Filter
15	.15	400	TP417	S-4-02	TC-12	Line Isolating Trap
16	.06	200	TP428	S-4-06	TC-16	Screen Bypass
17	.01	400	TP428	S-4-06	TC-16	Line Isolating
18	.05	200	TP428	S-4-06	TC-16	Plate Decoupling
19	.05	400	TP428	S-4-06	TC-16	Osc. Coupling
20	250	500	MC240	MO.5-325	LFM-325	Line Isolating Trap*
21	250	500	MC240	MO.5-325	LFM-325	50L6 Cath. Bypass
22	50	500	MC225	MO.5-45	LFM-45	Osc. Feedback
23	250	500	MC240	MO.5-325	LFM-325	Osc. Grid Cond.
24	6	500	6090505007	MS-55	MS-55	RF Coupling
25	275	500	30-1220-7			Osc. Coupling S.M.
26	275	500	30-1220-7			Fixed Pad

*Used in Later Models
†May be 300 MMF in Some Models

CONTROLS

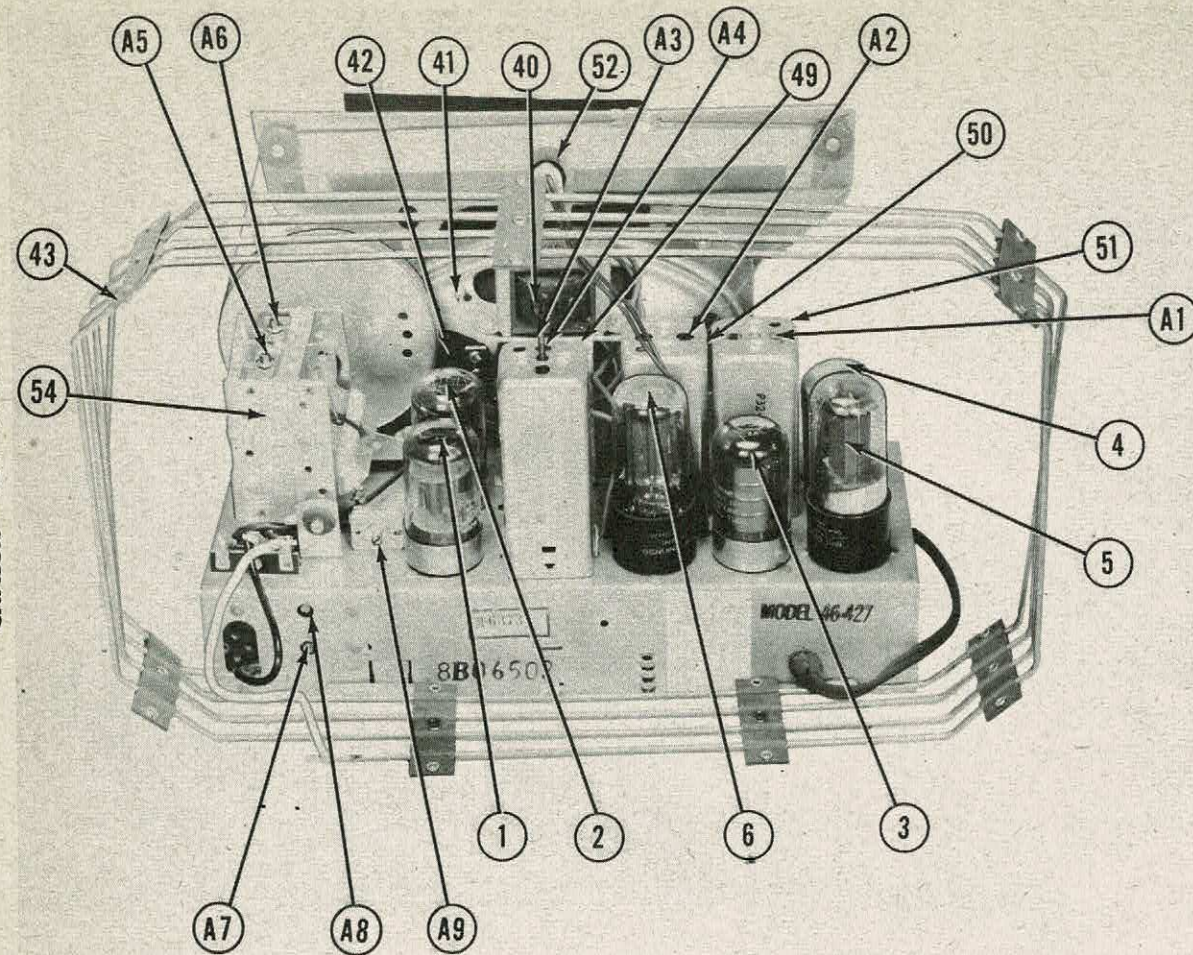
ITEM No.	RATING	REPLACEMENT DATA				INSTALLATION NOTES
		PHILCO PART No.	MALLOY PART No.	IRC PART No.	CLAROSTAT PART No.	
27(A)	500KΩ	Not Req.	MF48	D13-133	M-50-Z	Volume Control
27(B)	Shaft	Not Req.	Not Req.	A	Not Req.	Attach to 27A per instructions
27(C)	Switch	Not Req.	Not Req.	41	SW-A	

RESISTORS

ITEM No.	RATING	REPLACEMENT DATA			IDENTIFICATION CODES
		PHILCO PART No.	MALLOY PART No.	IRC PART No.	
28	470Ω	83-3675340	BTS-47K	BTS-47K	Y1-V1-Or. Osc. Grid
29	220Ω	86-2223340	BFA-2200	BFA-2200	Red-Red-Red Converter Cathodes
30	2.2 Meg.	86-5223340	BFS-2.2 Meg	BFS-2.2 Meg	Red-Red-Grn. AVC Network
31	10KΩ	86-5103340	BFS-10K	BFS-10K	Br.-Blk.-Or. Plate Load
32	10KΩ	86-5103340	BFS-10K	BFS-10K	Br.-Blk.-Or. Plate Filter
33	15KΩ	86-5153340	BFA-15K	BFA-15K	Br.-Grn.-Or. Screen Dropping
34	2.2 Meg.	86-5223340	BFS-2.2 Meg	BFS-2.2 Meg	Red-Red-Grn. AVC Network
35	4.7 Meg.	86-5473340	BFS-4.7 Meg	BFS-4.7 Meg	Y1-V1-Grn. 1st AF Grid
36	470KΩ	86-4473340	BFS-470K	BFS-470K	Y1-V1-Y1. 1st AF Plate Load
37	470KΩ	86-4473340	BFS-470K	BFS-470K	Y1-V1-Y1. Output Grid
38	130KΩ	86-1133340	BW-130	BW-130	Br.-Or.-Br. Output Cathode
39	120KΩ	86-1133340	BFS-120K	BFS-120K	Br.-Red-Y1. Line Isolating *

*Not Used in all Models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS

TRANSFORMER (OUTPUT)

ITEM No.	RATING		REPLACEMENT DATA		INSTALLATION NOTES
	IMPEDANCE	DC RES.	PHILCO PART No.	STANCO PART No.	
40	2250Ω 2.6Ω 192Ω	PRI. SEC. .56Ω	Part of 36-1533	A-3976 T-13542#	#band one mounting tab under and solder to the original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA		INSTALLATION NOTES
	FIELD	VC IMP.	PHILCO PART No.	JENSEN PART No.	
41	300Ω 2.6Ω	2.6Ω	36-1533	NONE	
42	4"x6"	VC DIA. 2"	NOT READILY REPLACABLE-USE COMPLETE SPEAKER UNIT.		

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	PHILCO PART No.	MEISSNER PART No.	
43	Loop Ant. Coil	0Ω	1.4Ω	76-1279		
44	EC Ant. Coil	.1Ω		32-4008		
45	SW Ant. Coil	0Ω		32-3716		
46	EC Osc. Coil	8Ω		32-3991		Part of 32-3991
47	SW Osc. Coil	0Ω				" " "
48	Grid Coupl. Coil	.8Ω				" " "
49	Input IF	.9Ω	21Ω	32-3956		From diode to white lead 40.5KΩ - to blk. lead 650KΩ
50	Interstage IF	9Ω	22Ω	32-3957		
51	Output IF	52Ω	See in-stallation notes	32-3958		

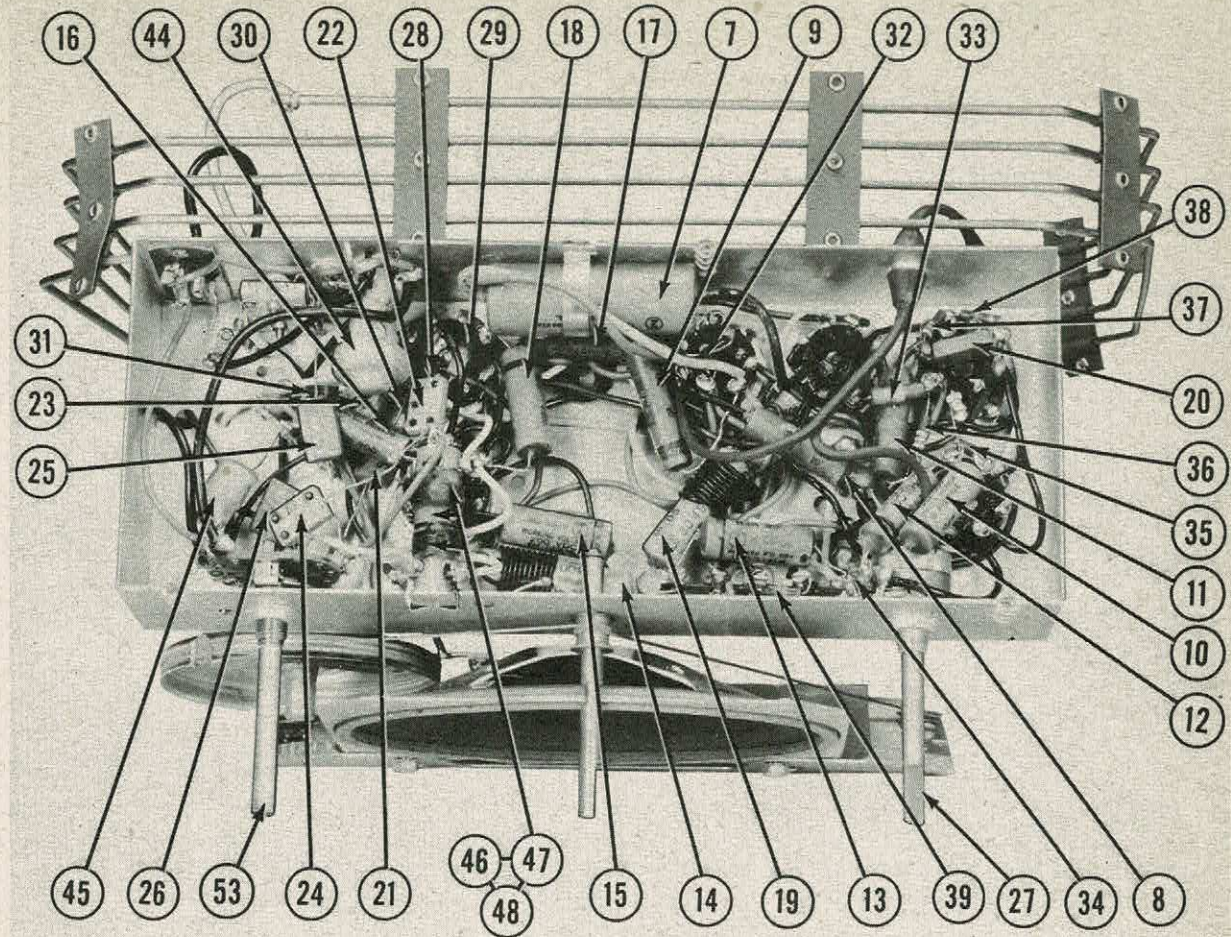
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	REPLACEMENT DATA		INSTALLATION NOTES
				BEAD COLOR	PHILCO PART No.	
52	Bayonet	6-8	0.15	Brown	34-2038	#47

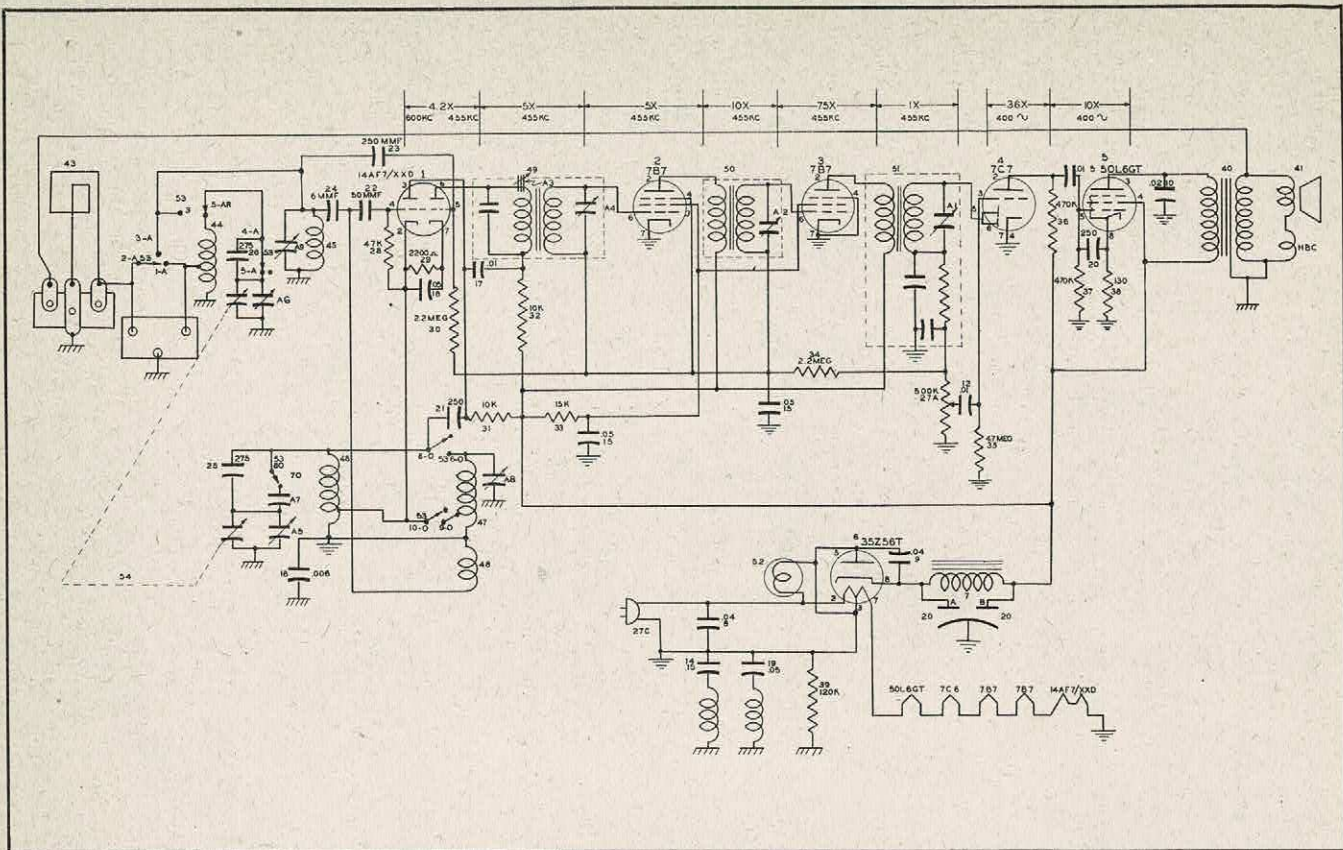
MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
53	Band Switch	M2-1772	
54	Tuning Cap.	31-2555	2 Gang Variable Capacitor
47	Trimmer	31-6453	Broadcast Osc. Short Wave Osc. (Part of 31-6453)
48	"	31-6423	" Ant. Scale
49	Dial Knob Assembly	27-5895	Volume, Tuning & Band Switch
	Cabinet	54-4511	Walnut-Plastic Covered Wood
		10650	

CHASSIS—BOTTOM VIEW

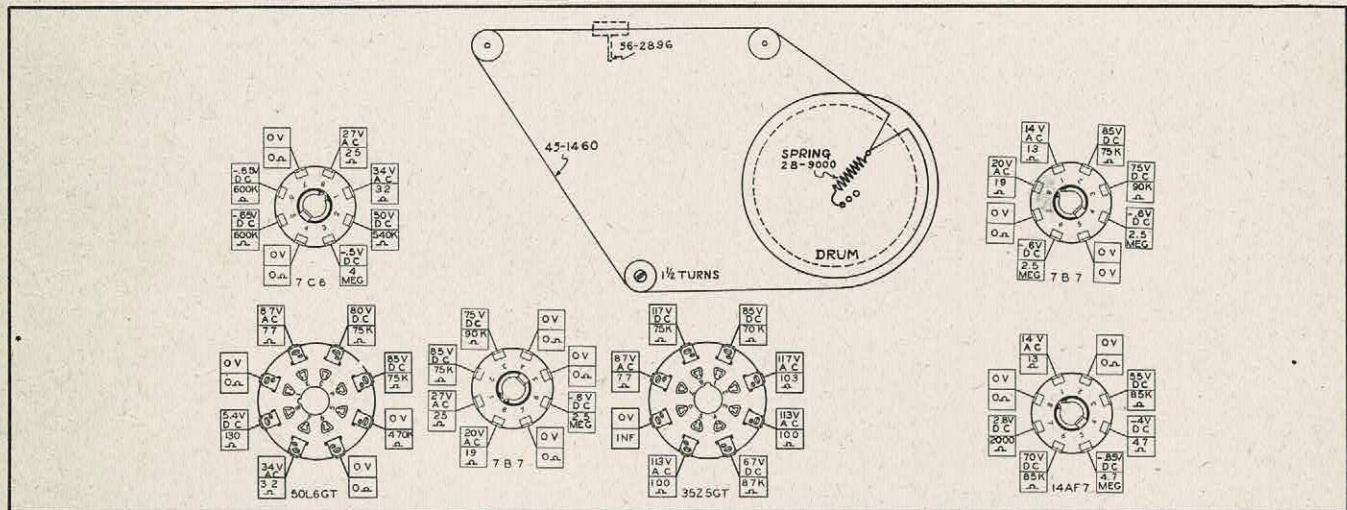


SCHEMATIC DIAGRAM



The stage gain measured values listed above are approximate values for average operative stages, rather than absolute values. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3 volt battery bias substituted for measurement.

VOLTAGE AND RESISTANCE ANALYSIS CHART



1. DC voltage measurements are at 20,000 ohms per volt; AC voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of $\pm 10\%$ in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

HOWARD W. SAMS & CO., INC.

2924 EAST WASHINGTON STREET • INDIANAPOLIS 6, INDIANA

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